



# PATENT SPECIFICATION

DRAWINGS ATTACHED

840,329

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International Classification—F06b.

## COMPLETE SPECIFICATION

### Improvements Relating to Panel and Shield Assemblies

We, F. T. PRODUCTS LIMITED, a British Company, of 200 Gresham House, Old Broad Street, London, E.C.2, England, do hereby declare the invention, for which we

5 pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to an assembly of a metallic box-like shield for electrical apparatus, held to a slotted panel by means of a fastener, and to a fastener

10 for use in such an assembly. According to the invention there is provided a fastener comprising a single strip of material bent to U-shape so as to have a web and two approximately parallel limbs, there being sheared and bent out of the strip a lug which is directed away from the

15 web of the fastener in a direction approximately opposite to that of the limbs, characterised in that the lug is bent so as to form a snap-engaging elbow. According to a further feature of the invention there is provided an assembly of a metallic box-like shield for electrical apparatus held to a slotted panel with the aid of two fasteners as defined in the preceding paragraph, wherein an edge of the shield is gripped between the limbs of each

20 fastener and the lug of each fastener snaps through a slot in the panel. A preferred form of the invention will now be described with reference to the diagrammatic drawings accompanying the Provisional Specification, in which:—

Figure 1 is a perspective view of a fastener,

25 Figure 2 is an end elevation of the same fastener,

Figure 3 shows two of the fasteners attached to the lower end of a radio shield in the form of a box or can,

30 Figure 4 is a perspective view of a panel to which the shielding can of Figure 3 is to

be attached, and

Figure 5 is a sectional elevation showing the fastener assembled to the panel.

The fastener illustrated generally at 10 in the Figures is formed from a single strip of suitable metal, such as hard rolled phosphor bronze, which after being fashioned to its final shape is rendered spring hard. It will be seen that the fastener consists of a U-shaped portion having a web 11, a limb 12 55 formed with two inwardly and rearwardly directed prongs 13 and 14, a bifurcated limb 15, 16 and a lug 17 sheared and bent out of the limb 15, 16 and formed with an elbow 18. It will be seen that the lug is bent first away from and then towards the median plane of the fastener, i.e. the plane which (approximately) bisects the U of the fastener.

At 19 in Figure 3 is shown a metallic 65 shielding can, such as are used in the radio industry, which is to be attached to a panel 20 (Figure 4) formed with slots 21, 22 which may be rectangular as shown or of any other suitable shape. The two slots may, in some 70 cases, be replaced by a single aperture.

In order that this may be done (it may be after the two slots have been replaced by a single aperture in the panel in obvious manner) two or more of the fasteners 10 75 are mounted on the lower edge of the can 19 in the position shown at 10A and 10B with the U-portion of each fastener straddling an edge of the can and the prongs such as 13 and 14 biting into the metal of the can to prevent the fasteners from coming off the can.

When the fasteners have been so assembled, the can and fasteners are pushed towards the slots 21, 22 so that the elbows 85 18 of the lugs snap over the edges of the slots or of the single aperture into the position shown in Figure 5, whereupon the fasteners may if desired be soldered to the panel.

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The prongs 13, 14 in the U-portion may be replaced by dimples or internally directed deformations in which case the can is frictionally held and may be removed when desired.

#### WHAT WE CLAIM IS:—

1. A fastener comprising a single strip of material bent to U-shape so as to have a web and two approximately parallel limbs, there being sheared and bent out of the strip a lug which is directed away from the web of the fastener in a direction approximately opposite to that of the limbs, wherein the lug is bent so as to form a snap-engaging elbow.

2. An assembly of a metallic box-like shield for electrical apparatus held to a slotted panel with the aid of two fasteners as claimed in claim 1, wherein an edge of the shield is gripped between the limbs of each fastener and the lug of each fastener snaps through a slot in the panel.

3. An assembly as claimed in claim 2, wherein the fastener is formed in a limb

with a pair of inwardly and rearwardly directed prongs for engaging the shield.

4. An assembly as claimed in claim 2 or claim 3, wherein the lug of the fastener is further secured to the panel by soldering.

5. An assembly as claimed in claim 2 or claim 4, wherein a limb of the fastener is formed with an internally directed deformation serving to grip the wall of the shield by friction.

6. A fastener substantially as described herein with reference to the drawings accompanying the Provisional Specification.

7. An assembly of a metallic box-like shield for electrical apparatus held to a slotted panel with the aid of a fastener substantially as described herein with reference to the drawings accompanying the Provisional Specification.

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### PROVISIONAL SPECIFICATION

#### Improvements Relating to Fasteners

We, F. T. PRODUCTS LIMITED, a British Company, of 200 Gresham House, Old Broad Street, London, E.C.2, England, do hereby declare this invention to be described in the following statement:—

The present invention relates to fasteners, particularly although not exclusively suitable for attaching a metallic shield in the form of a tube or box to a slotted panel so as to shield a piece of electrical apparatus such as a valve lying within the tube or box.

A preferred form of the invention will now be described with reference to the accompanying diagrammatic drawings, in which:—

Figure 1 is a perspective view of a fastener,

Figure 2 is an end elevation of the same fastener,

Figure 3 shows two of the fasteners attached to the lower end of a radio shield in the form of a box or can,

Figure 4 is a perspective view of a panel to which the shielding can of Figure 3 is to be attached and Figure 5 is a sectional elevation showing fasteners assembled to the panel.

The fastener illustrated generally at 10 in the Figures is formed from a single strip of suitable metal, such as hard rolled phosphor bronze, which after being fashioned to its final shape is rendered spring hard. It will

be seen that the fastener consists of a U-shaped portion having a web 11, a limb 12, formed with two inwardly and rearwardly directed prongs 13 and 14, limbs 15 and 16 and a downwardly directed lug 17 formed with an elbow 18.

At 19 in Figure 3 is shown a metallic shielding can which is to be attached to a panel 20 (Figure 4) formed with slots 21, 22.

In order that this may be done two or more of the fasteners 10 are mounted on the lower edge of the can 19 in the position shown at 10A and 10B with the U-portion of each fastener straddling an edge of the can and the prongs such as 13 and 14 biting into the metal of the can to prevent the fasteners from coming off the can.

When the fasteners have been so assembled, the can and fasteners are pushed towards the slots 21, 22 so that the elbows 18 of the fasteners snap over the edges of the slots into the position shown in Figure 5, whereupon the fasteners may if desired be soldered to the panel.

The prongs 13, 14 may be replaced by dimples in which case the can is frictionally held and may be removed when desired.

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FIG.1

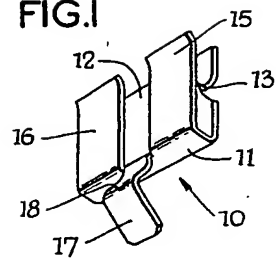


FIG.2

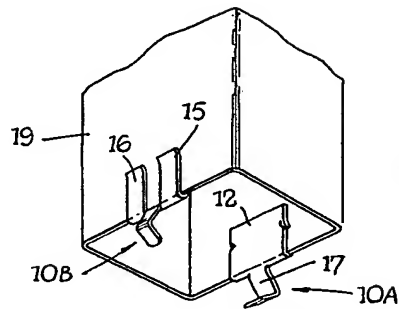
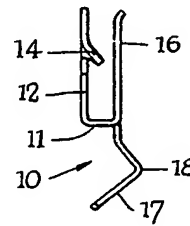


FIG.3

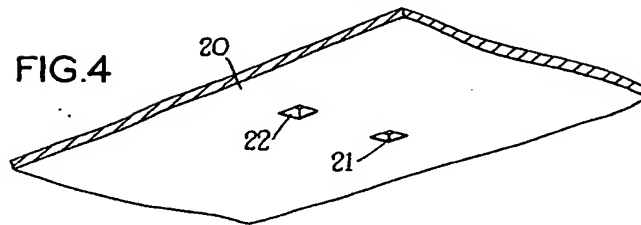
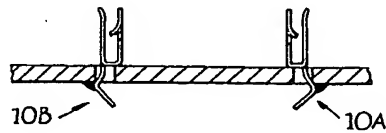


FIG.4

FIG.5



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